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AUTHOR Talamantes, Norma Ann
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ABSTRACT

The study investigated articulatory production in 50 Spanish speaking preschool children through administration of the Prueba de Articulacion de Consonantes y Semivocales, a measure of 21 stimulus words with accompanying drawings and which tests 18 consonants and two semivowels in either the initial, medial, or final position. Errors produced by the sample group were expected errors for the age group: therefore, the test appears to be a satisfactory screening test of articulation for monolingual Spanish speaking children. Two tables with statistical data are included. (SB)

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A STUDY OF THE ARTICULATORY PRODUCTION OF SPANISH CONSONANTS AND SEMIVOWELS BY A GROUP OF SPANISH SPEAKING CHILDREN

by

Norma Ann Talamantes, President
NAT Corp.
216 W. California
El Paso, Texas 79902

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The profession of Speech-Language Pathology has been insensitive to nurturing interest in non-English speaking national origin minority groups for too many years. This is evident in the fact that the American Speech-Language and Hearing Association did not publish a policy that specifically made reference to the language disorders and language differences of bilingual and bidialectal speakers until 1975. (A.S.H.A. 1975) Before this, emphasis had been placed mainly on dialects and sub-standard English. Unfortunately our profession has made minimal efforts since that date to meet the specific needs of the Spanish speaker. This is most noticeable in the area of articulation, where a void of knowledge and of commercially available diagnostic instruments exists. Consequently the speech pathologist is in a real dilemma.

The Austin Spanish Articulation Test is one of the very few commercially available instruments for "evaluating the principle (sic) phonemes and phoneme combinations of the Spanish language." Prior to the availability of this instrument, speech pathologists concerned with evaluating the articulation of Spanish speakers designed their own cursory instruments and frequently assessed the English articulation of non-native speakers. Unfortunately this later procedure was recommended by such "experts" as Wing (1974), although she did point out that the Spanish and English sound system were not identical.

The Austin Spanish Articulation Test by Carrow-Woolfolk (1975) is now being used by many school districts and clinics; however, fluent

Spanish speaking speech pathologists have chosen not to rely on it. Their decision is based upon the errors they feel exist in the test itself. These are identified by Natalicio (1978) as the following:

(a) It misleads non-Spanish speakers into concluding that they can successfully administer it.

(b) The basis for target sound selection is questionable.

(c) Many aural stimuli are excessively long and complex for the elicitation of single target sounds.

(d) Some of the visual stimuli are too detailed and cluttered.

(e) The length of the test is inappropriate for young children.

(f) Test scoring instructions are incomplete; and finally

(g) No norms or guidelines for data interpretation are provided. (p. 231)

Natalicio (1978) further stated that the "publisher should be criticized for disseminating a test that is clearly in only the initial stage of development."

The only other significant study and/or instrument involving the phonology of Spanish speaking children is an unpublished report by Gonzalez titled "Spanish Child Language Morphology and Phonology: The National Perspective." Little detail is given as to the development of the samples utilized in the report, the criteria used, or the number of children evaluated.

The study of the speech of Chicano children in Austin, Texas by Matluck (1979) was included in Dr. Garcia's paper.

In 1980 Gonzalez also reported on samples of Spanish child language from pre-kindergarten and first graders from urban and rural populations

from California, Texas, Florida, New York, New Jersey, Chicago, Arizona, New Mexico and Colorado.

The studies by Matluck (1979) as reported by Garcia and Acosta (1980), and Gonzalez (1980), demonstrate the dialectical variations found among Spanish speaking children in various bilingual communities, compounding the pathologist's dilemma in the evaluative process. These variations appear to be trends in the acquisition of Spanish and should not be considered articulation errors if produced by pre-school children. These variations should be taken into consideration in measuring articulatory production and designing instruments for such measurement.

The need for more information on the development and assessment of the phonology of the Spanish speaker, is clearly manifest in the foregoing discussion. The author therefore elected to pursue this area of inquiry, and consequently developed the Prueba de Articulacion de Consonantes y Semivocales.

She first selected stimulus words to be used in the evaluation of the articulation of the selected age group. The three criteria that were used by the author were: (1) that they could be identified by the same name by all dialectical speakers of Spanish, (2) that they could be demonstrated pictorially, (3) that the objects demonstrated could be identified by children.

The phonetic symbols used in the Prueba de Articulacion de Consonantes y Semivocales were adopted from Stockwell and Bowen.

For linguistic accuracy, symbols enclosed in diagonal lines / /, are used to denote phonemic symbols and phonetic symbols enclosed in brackets are used to denote allophones. Statements regarding the occurence of phonemes and their allophones, and the selection process used for stimulus words may be found in a future publication.

You may be interested to know that in the initial stages of the development of the Prueba de Articulacion de Consonantes y Semivocales, the author had selected the stimulus word "calcetin" to test the initial position /k/, the medial position /l/ and the final position /n/. However, the author elected not to use this word for testing since it proved to be a common word that is often mispronounced by children although they are able to produce a /k/, /l/ and /n/ in other words. The common pronunciations for the word calcetin are: "sartin," "cacetin," "lancetin," "cetin," "taltetin," "catetin," "sitin" and "satin." This is only one example of the difficulty involved in developing evaluative material.

According to Garcia and Acosta (1980) "studies have yet to be completed describing the various dialects of Spanish spoken in the U.S." However, the author feels that the stimuli selected for the Prueba de Articulacion de Consonantes y Semivocales are identified by the same name, by all dialectical speakers of Spanish.

The Prueba de Articulacion de Consonantes y Semivocales consists of 21 stimulus words with accompanying drawings representing each. It tests 18 consonants and two semivowels in either the initial, medial, or final position. All instructions are provided in Spanish on the recording form so the examiner must be fluent in the use of the Spanish language and familiar with its phonological composition. We feel this is essential.

Fifty Spanish-speaking pre-school children from a public school in Juarez, Mexico between the ages of 5 years, 4 months to 6 years were administered the Prueba de Articulacion de Consonantes y Semivocales for the preliminary evaluation of the test. Children were selected for testing on the basis that they met the following criteria: (1) At least average intelligence as judged by their teacher, (2) Normal hearing as indicated by pure-tone audiometric screening, (3) Normal language

development and speech as judged by their teacher and the speech pathologists while establishing rapport prior to test administration.

The test took 10 minutes to complete, and was administered by the author who is fluent in Spanish. The results were recorded concurrently by the author and another fluent Spanish speaking speech pathologist. Both had worked together in the past and consequently had developed mutually consistent test techniques and listening abilities. Upon completion of the test administration, both recorders were in agreement in their recording of responses. The subjects found all pictorial stimuli easily recognizable.

RESULTS:

The frequency distribution of the number of misarticulations per child is seen in Table I. Of the 50 children tested, 19 children or 38% exhibited a misarticulation of at least one sound. A mean of 1.22 errors per child with a standard deviation of 3.34 and a range of 0 to 8, was established for the sample group. If a misarticulation occurred in both the initial and medial position, the misarticulations were tabulated as one error. Of the 50 children tested, 62% of the children had mastered all of the sounds evaluated and the greatest number of misarticulations of any one child was 8.

Table II shows the sounds utilized in the Prueba de Articulacion de Consonantes y Semivocales and the position they occupy in the stimulus words. The table also indicates the number of times a particular sound was misarticulated and the most frequent error produced for the stimulus sound tested.

Analysis of Table II further reveals that the most common sound misarticulated by the children tested is the /s/ regardless of its position. This is followed by the /rr/ in the initial and medial position

and the /r/ in the final position. Omission of the d in the medial position is the most common misarticulation.

Further examination of the /s/ sound in Table II indicates that it was usually substituted with the /s/ variant which is similar to the English /θ/. It should be noted the similar articulation of the /s/ by a Castillian would not be considered an error.

The Prueba de Articulacion de Consonantes y Semivocales is a useful instrument for the evaluation of the consonants and semivowels used by the age group studied. The responses obtained are consistent with the phonological development level of this age group reported by Prather and others (1975).

The results of the fifty children sampled provide preliminary information to be able to compare some area of development with English and Spanish. All de elopmental studies of consonants in English, indicate that consonants in the initial position are developed first, followed by the medial position and then the final position. In Spanish, consonants are developed in the same sequence; however, it should be kept in mind that the only consonants in the final position in Spanish are /n/, /l/, /s/ and /rr/. Most Spanish words end in a vowel.

According to Templin (1957) and Winitz (1969) omissions occur more frequently in the final position in English. In this study, more omissions occurred in the medial position and those omissions were restricted only to d , /r/ and g . No sounds were omitted in the initial position of words, and no additions were made in any of the positions. Again, for the sample studied, the medial position had the highest incidence of errors.

DISCUSSION AND RECOMMENDATIONS

Since the Prueba de Articulacion de Consonantes y Semivocales was intended to be a screening test, the author set a design objective of no more than one word to test each production position. As a result, this instrument is quick to administer and record on the recording form designed.

The errors produced by the sample group studied are expected errors of the age group. Therefore this test appears to be a satisfactory screening test of articulation for monolingual Spanish-speaking children.

The development of this instrument, and the sampling of children in this study has led to the following needs:

(1) Sampling of children below and above the age level of the group sampled.

(2) Expansion of the instrument to include vowels, diphthongs and consonant clusters.

(3) Sampling a bilingual population.

We are in the process of meeting these needs and hope to have results of studies currently being undertaken in the next few months.

TABLE 1

Number of Misarticulations	Number of Children
8	2
7	0
6	1
5	1
4	2
3	4
2	5
1	4
0	$\frac{31}{50}$

Mean 1.22

TABLE II

Initial Sound	Number of Errors	Most Frequent Substitute	Medial Sound	Number of Errors	Most Frequent Substitute	Final Sound	Number of Errors	Most Frequent Substitute
[s]	7	*/θ/	[s]	7	*/θ/	[s]	7	*/θ/
/rr/	5	/d/	[d<]	6	4 omiss.	/r/	5	/l/ /t/ or omiss.
/w/	1	/b/	/rr/	4	/d/	/n/	1	omiss.
/k/	1	/s/	/r/	4	/d/or /l/ or omiss.	/l/	0	
						4	13	
/f/	1	/p/	[g]	3	d or /k/ or omiss.			
[d<]	1	/t/	/l/	3	/n/ or /r/			
/h/	0							
[n]	0		[d]	1	/b/			
[g]	0		/h/	1	/k/			
[m]	0		[b]	0				
/p/	0		[n]	0				
/y/	0		/t/	0				
[b]	0		/y/	0				
/ch/	0		/p/	0				
/t/	0		/ny/	0				
/l/	0		[m]	0				
16	16		/f/	0				
			/k/	0				
			/ch/	0				
			18	29				

* s variant

Total number of sounds 38

Total number of misarticulations 58

Table II Sounds Misarticulated